

Notice of Allowability

Application No.

10/601,623

Examiner

Terry L Englund

Applicant(s)

WADA, MASAHARU

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt/Dwgs (Oct 27, 2004); Interview (Nov 23, 2004); and Approval (Nov 26, 2004).
2. ☒ The allowed claim(s) is/are 1-6,9-17,20 and 21 (now renumbered 1-17, respectively for printing purposes).
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment ~~or in the Office action of~~ Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11272004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone message on Nov 26, 2004 by the applicant's representative Remus F. Fetea (an authorized employee of Oblon Spivak McClelland Maier & Neustadt PC).

The application has been amended as follows:

Claim 9, line 3: changed "ninth" to --first--; changed "second" to --first--;

line 7: changed "tenth" to --second--; changed "second" to --first--;

line 10: changed "ninth" to --first--;

Claim 10, line 3: changed "an 11th" to --a first--;

line 5: changed "12th" to --second--;

line 6: deleted "said"; changed "11th" to --first--;

line 8: changed "13th" to --third--;

line 9: added --said-- prior to "one end"; changed "11th" to --first--;

line 10: changed "12th" to --second--;

line 12: changed "14th" to --fourth--;

line 13: changed "11th" to --first--;

line 16: changed "15th" to --fifth--;

line 17: changed "12th" to --second--;

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line 19: changed "14th" to --fourth--;

line 20: changed "16th" to --sixth--;

line 22: changed "the output terminal" to --an output terminal of the first
comparator--; changed "13th" to --third--;

line 24: changed "17th" to --seventh--;

line 25: added --of the first comparator-- after "output terminal";

line 27: changed "12th and 15th" to --second and fifth--;

Claim 11, line 26: added --the-- after "resets";

line 28: added --the-- after "resets";

Claim 14, line 1: changed "detector" to --circuit--;

Claim 20, line 3: changed "ninth" to --first--; changed "second" to --first--;

line 7: changed "tenth" to --second--; changed "second" to --first--;

line 10: changed "ninth" to --first--;

Claim 21, line 3: changed "an 11th" to --a first--;

line 5: changed "12th" to --second--;

line 6: deleted "said"; changed "11th" to --first--;

line 8: changed "13th" to --third--;

line 9: added --said-- prior to "one end"; changed "11th and 12th" to --first and
second--;

line 12: changed "14th" to --fourth--;

line 13: changed "11th" to --first--;

line 16: changed "15th" to --fifth--;

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line 17: changed "12th" to --second--;

line 19: changed "14th" to --fourth--;

line 20: changed "16th" to --sixth--;

line 22: changed "the output terminal" to --an output terminal of the first

comparator--; changed "13th" to --third--;

line 24: changed "17th" to --seventh--;

line 25: added --of the first comparator-- after "output terminal"; and

line 27: changed "12th and 15th" to --second and fifth--.

With some exceptions, that are described later, the majority of amended changes identified above deal with ordinal numbers, and the possibility they can cause confusion within the claim's chain of dependency because these numbers identify an order, or sequence. Some type of gap (or break) within the ordinal numbers makes the claimed limitation(s) misleading, indefinite, and/or confusing. For example, claim 9 previously recited "a ninth MOS transistor of a second conductivity type", which implies there are first-eighth MOS transistors, and a first conductivity type, identified within claim 9's chain of dependency. However, claim 9 depends directly on claim 1, which does not recite a single MOS transistor, or another conductivity type. On the other hand, claim 6 clearly identifies fifth-eighth MOS transistors, and a first conductivity type, and since claim 6 depends on claims 5 (with its third and fourth MOS transistors) and 4 (with its first and second MOS transistor), the first-eighth MOS transistors and first conductivity type are all clearly identified. However, it was determined there was no reason to make claim 9 dependent on claim 6, which would make claim 9 unduly limited. Therefore, changing the ordinal numbers within the claims amended above minimizes possible confusion with respect to

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the limitations recited. Without these changes, it would not be clear if the dependent claim(s) actually depend on the proper claim(s).

Since the "one end" of the first MOS transistor had not been previously identified, the use of "said one end" in claim 10 was changed to --one end-- to minimize possible confusion. Related to this, the term --said-- was added prior to "one end" on line 9 of claim 10 to clearly refer those ends to the "one end" of each transistor that are recited on lines 5 and 6 of the same claim. The changes made to the "output terminal" phrases in lines 22 and 25 of each of claims 10 and 21 now clearly identify that output terminal with the first comparator, thus distinguishing it from the first/second output terminals of the current generation circuit recited within their respective independent claim (i.e. 1 and 11). The addition of --the-- after "resets" (and prior to "data") within claim 11 addresses/corrects an inadvertent oversight by the examiner (i.e. these were not written up in the previous Office Action). Since line 2 of claim 11 identifies "data" (i.e. "holds data"), any subsequent use of "data" as the subject should be preceded by either --the-- or --said-- to clearly refer back to the previously cited "data." Another inadvertent oversight by the examiner was addressed/corrected in claim 14, where "The detector" within the preamble was changed to --The circuit-- since claims 11-13 do not recite "a detector." Claim 21, line 9 was changed for the same reason as line 9 of claim 10, as previously described.

The following change to the drawings has been approved by the examiner and agreed upon by the applicant: Fig. 2 will show the output of block 21 (presently shown only going to block 23), as also being applied to block 22 to make Fig. 2 more accurate and correspond to the description and other figures. For example, this change is clearly supported by Figs. 3-5, which correspond to Fig. 2's blocks 21-23, respectively, wherein output VOUTA of 21 is applied as an

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input to both 21 and 22. In order to avoid abandonment of the application, the applicant must make the above agreed upon drawing change.

Response to Amendment/Drawings

The amendment and drawings submitted on Oct 27, 2004 have been carefully reviewed and considered with the following results:

Although the changes to Figs. 2 and 5 did overcome two of the drawing objections described in the previous Office Action, the objection to Fig. 2 (with respect to the input of block 22 not receiving the output of block 21) had not been addressed. Therefore, the set of Replacement Sheets submitted on Oct 27, 2004 have not been approved. However, a change addressing the remaining objection to Fig. 2 (i.e. block 22 is not shown receiving the output of block 21) was approved as described above within the Examiner's Amendment. Therefore, it is understood that a new set of drawings (Replacement Sheets) will be submitted which will show the following changes to Figs. 2 and 5: 1) blocks 22 and 23 of Fig. 2 will both be shown receiving the same output signal from block 21; 2) the "<" sign in block 23 of Fig. 2 will be replaced with the equal sign (as shown in the Replacement Sheet of Fig. 2 submitted on Oct 27; and 3) Fig. 5 will show the two pair of transistors (51-1/52-1 and 51-2/52-2) within block 23 (as shown in the Replacement Sheet of Fig. 2 submitted on Oct 27). Assuming these changes will all be shown now in a new set of Replacement Sheets, the objections to the drawings have been withdrawn.

The changes made to the figures and disclosure overcame most of the objections described in the previous Office Action. The objection with respect to page 8 and the voltage across resistor 24 was not specifically described. However, after reconsidering the figures and

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their descriptions, it is understood how the voltages V1 and V2 relate to one another with respect to resistors 24 and 26. Therefore, all of the objections described in the previous Office Action have now been withdrawn.

The cancellation of claims 7-8 and 18-19 rendered their respective objections and/or rejections moot.

The amended claims overcame the objections to claims 3-6, 10, 14-17, and 21 that were described in the previous Office Action. All of these objections have been withdrawn, and the inadvertent oversights within the claims, that were noted when the claims were reviewed and reconsidered, were all addressed/corrected by the Examiner's Amendment described above.

The changes to Fig. 5, and changes made to the disclosure, overcame all of the rejections of claims 1-6, 9-17, and 20-21 under 35 U.S.C. 112, first paragraph that were described in the previous Office Action. Those first paragraph related rejections have now all been withdrawn.

The amended claims overcame most of the rejections of claims 1-6, 9-17, and 20-21 under 35 U.S.C. 112, second paragraph as described in the previous Office Action. However, the changes made to claims 9-10, and 20-21 created new concerns with respect to their use of ordinal numbers, and the "output terminal" related rejection of both claims 10 and 20 was not addressed/ corrected. Since no prior art rejection remained, these problems were all addressed/corrected by the Examiner's Amendment described above. [Note: The examiner initially contacted the office of Oblon Spivak McClelland Maier & Neustadt PC on Nov 22nd, and left a message. Remus F. Fetea returned the call on Nov 23rd, and all of the above concerns were discussed. Final approval for these changes was granted on a telephone message left on the examiner's telephone message system on Nov 26th. A draft of the changes to the claims was also

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submitted to the examiner on Nov 26th, thus ensuring the approved changes were all fully understood and would be covered by the Examiner's Amendment.] Therefore, all rejections of the active claims under 35 U.S.C. 112, as described in the previous Office Action, have now been withdrawn.

The amended claims of Oct 27th also overcame the rejections of: claims 1-2 under 35 U.S.C. 102(b) with respect to Sakurai; 2) claim 10 under 35 U.S.C. 103(a) with respect to Sakurai/Suda; and 3) claims 11-13, and 21 under 35 U.S.C. 103(a) with respect to Sakura/Suda/Iwasaki. Since none of these references show/disclose the specific relationships between the current mirror and second load element as now recited within each of independent claims 1 and 11, the previous Office Action's prior art rejections have all been withdrawn.

With the entry of the Examiner's Amendment described above, there is no known objection or rejection remaining within the present application.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

None of the prior art references of record show or disclose the specific relationship between the current mirror circuit and the second load element as recited within claims 1 (upon which claims 2-6, and 9-10 depend) and 11 (upon which claims 12-16, and 20-21 depend). More specifically, the second load element is connected between the second current path of the current mirror circuit and a second potential supply source, wherein the second input terminal of the first comparator is also coupled to the connection node between the second load element and the current mirror circuit. Since there is no strong motivation to modify or combine any prior art

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reference(s) to ensure these claimed limitations are also met, the claims are deemed patentably distinct over the prior art of record.

Claims 1-6, 9-17, and 20-21 are allowed, and are renumbered as claims 1-17, respectively for printing purposes. The renumbering takes into account the cancellation of claims 7-8 and 18-19.

Any comments considered necessary by the applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication, or previous communications, from the examiner should be directed to Terry L. Englund whose telephone number is (571) 272-1743. The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740.

The new central official fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Terry L. Englund

27 November 2004